



February 12, 2019

#5E27499-BG4A

NMOCD District 2
Mr. Mike Bratcher
811 S. First St.
Artesia, New Mexico 88210

SUBJECT: REMEDIATION PLAN FOR THE STERLING 20 STATE 1H RELEASE (2RP-5091),
CARLSBAD, NEW MEXICO

Dear Mr. Bratcher:

On behalf of Marathon Oil Permian LLC (Marathon), Souder, Miller & Associates (SMA) has prepared this Remediation Plan that describes the delineation and proposed remediation for a release of liquids related to oil and gas production activities at the Sterling 20 State 1H site. The site is in Unit O, Section 17, Township 23S, Range 27E, Eddy County, New Mexico, on State land. Figure 1 illustrates the vicinity and site location on an USGS 7.5-minute quadrangle map.

Table 1 summarizes information regarding the release.

Table 1: Release Information and Closure Criteria			
Name	Sterling 20 State 1H	Company	Marathon Oil Permian, LLC
API Number	30-015-42731	Location	32.29810545° -104.20840165°
Incident Number	2RP-5091		
Estimated Date of Release	November 11, 2018	Date Reported to NMOCD	November 11, 2018
Land Owner	State	Reported To	NMOCD District 2, NMLSO
Source of Release	Gun barrel tank		
Released Volume	80 bbls	Released Material	Crude Oil
Recovered Volume	72 bbls	Net Release	8 bbls
NMOCD Closure Criteria	<50 feet to groundwater		
SMA Response Dates	December 12, 2018, January 22, 2019		

1.0 Background

On November 11, 2018, an enardo valve on the gun barrel tank failed which caused a release of approximately 80 bbls of crude oil. Approximately 72 bbls remained within the lined tank containment and 8 bbls were released outside of the containment area affecting the immediate area around the containment. Approximately 72 bbls were recovered from the lined tank containment. The liner integrity was inspected and found to be compromised where plastic welding failed along the liner seam.

Information and Closure Criteria

The Sterling 20 State 1H is located approximately 8.5 miles southeast of Carlsbad, New Mexico on State land.

As summarized in Table 2 and illustrated in Figure 1, depth to groundwater in the area is estimated to be seventy-five (75) feet below grade surface (bgs). There are no known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 1/4/2019). The nearest significant watercourse is an irrigation canal located approximately 1,500 feet to the east of Sterling 20 State 1H.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of less than 50 feet bgs. The site will be restored to meet the standards of Table I of 19.15.29.12 NMAC. Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization Activities and Findings

On December 12, 2018, SMA personnel arrived on site in response to the release associated with the Sterling 20 State 1H. SMA performed site delineation activities by collecting soil samples around the release site and throughout the visibly stained area. Soil samples were field-screened for chloride using an electrical conductivity (EC) meter and for hydrocarbon impacts using a calibrated MiniRAE 2000 photoionization detector (PID).

A total of five (5) sample locations (L1-L5) were investigated using a hand-auger, to depths up to six (6) inches bgs. A total of five (5) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D. Table 3 itemizes the samples and field-screening results as well as identifying any variances from the typical specification of two samples per boring. Locations for all samples are depicted on Figure 3.

On January 22, 2019, SMA personnel returned to the location with a drill rig to further delineate the location. One borehole location (BH1) was drilled to nine feet bgs. A total of four (4) samples were collected for laboratory analysis using the methods listed above.

Laboratory samples were collected in accordance with the sampling protocol included in Appendix C. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico (Appendix D).

As summarized in Table 3, results indicate that an area approximately forty feet by twenty feet by four feet deep has been impacted.

4.0 Proposed Soil Remediation Work Plan

SMA proposes excavation and removal of contaminated soil. The impacted area will be excavated to approximately nine feet bgs. SMA will guide the excavation by collecting composite soil samples for field screening for chloride using an EC meter and for hydrocarbon impacts using a calibrated MiniRAE 2000 photoionization detector (PID).

The release area will be excavated to the NMOCD Closure Criteria as demonstrated in the attached Table 2. Due to safety concerns and limited space, the area around sample locations L3, L4, and L5 will be dug by hand to the extent that is both safe and practicable.

Confirmation samples will be composed of representative wall and base 5-point composite samples, each representing less than 200 ft² of exposed excavation area.

The contaminated soil will be transported for disposal at an NMOCD permitted disposal facility. Upon approval by NMOCD, the projected timeline for completion of remediation activities is approximately 90 days.

In accordance with 19.15.29.12.B(2), a deferral is being requested in the area immediately beneath the battery , as remediation in this area could cause safety issues or cause a major facility deconstruction. As described above, the contamination has been delineated and does not cause an imminent risk to human health, the environment, or groundwater.

5.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization, regulatory liaison, and preparing this remediation plan. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Heather Patterson at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:



Heather Patterson
Project Scientist



Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map

Figure 2: Surface Water Protection Map

Figure 3: Site and Sample Location Map

Tables:

Table 2: NMOCD Closure Criteria Justification

Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141

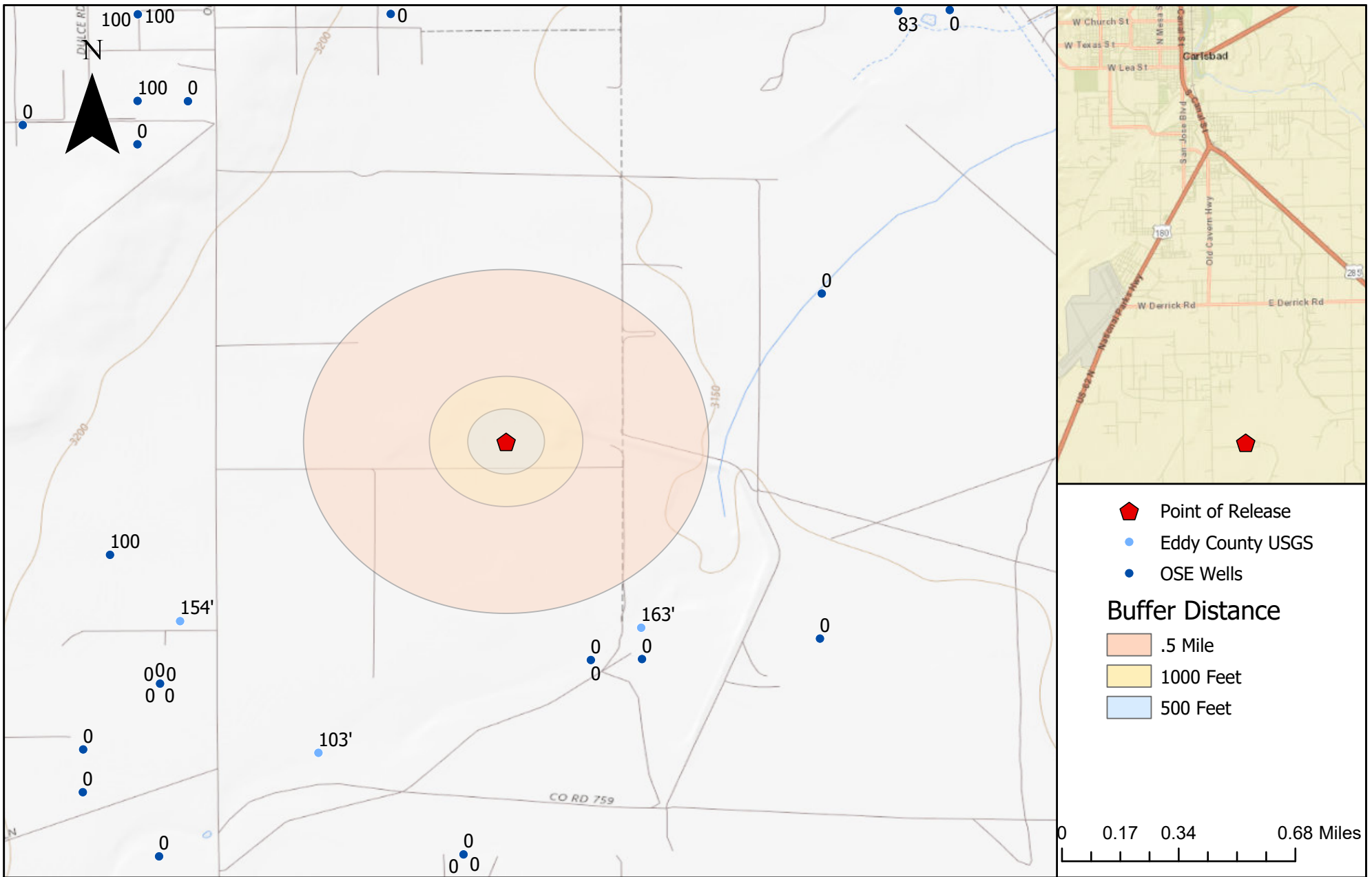
Appendix B: NMOSE Wells Report

Appendix C: Field Notes

Appendix D: Laboratory Analytical Reports

FIGURES

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Regional Vicinity & Wellhead Protection Map
Sterling 20 State 1H - Marathon
Sec 17 T23S R27E, New Mexico

Figure 1

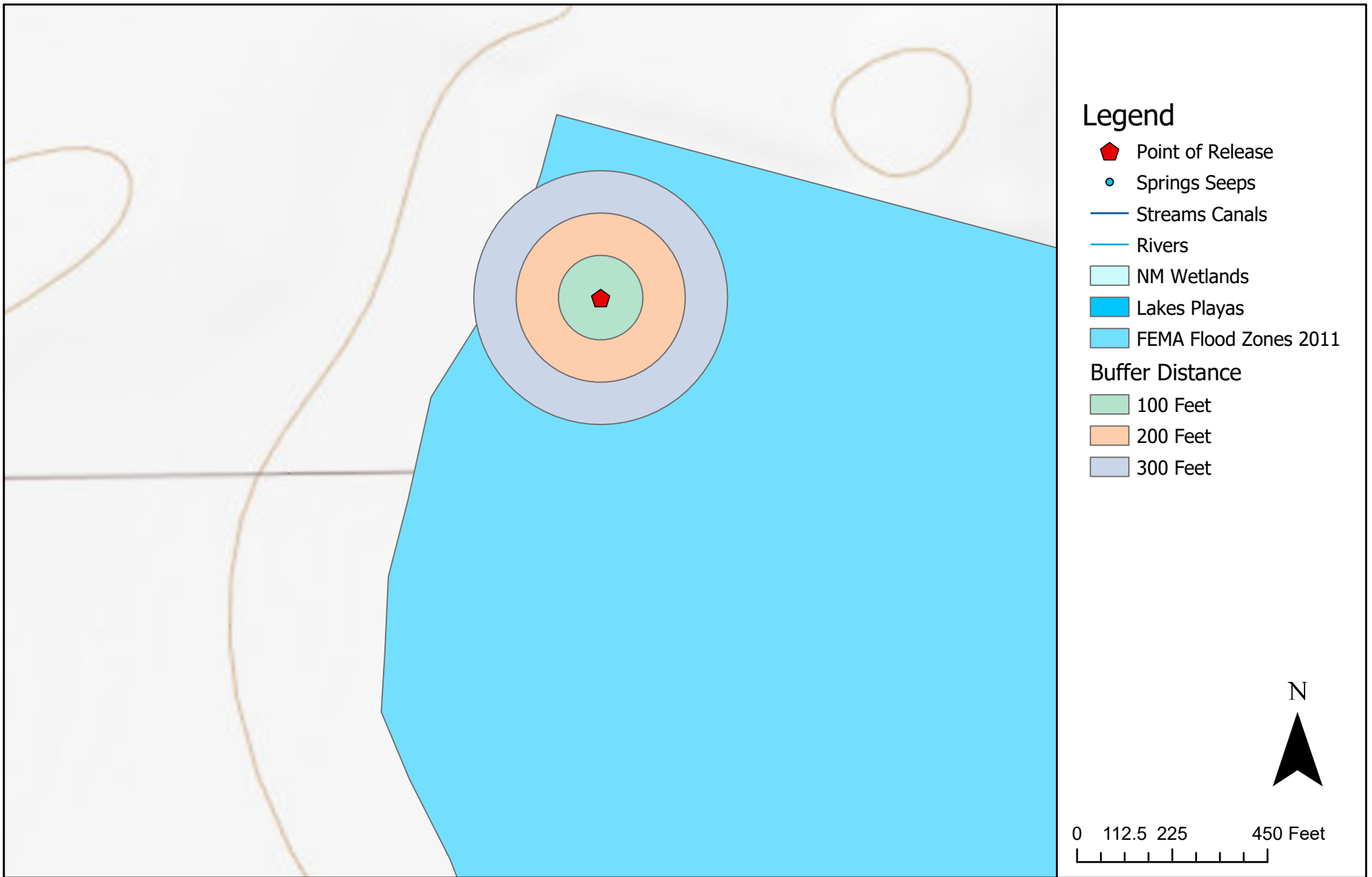
Revisions		
By: _____	Date: _____	Descr: _____
By: _____	Date: _____	Descr: _____
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Drawn	Heather Patterson
Date	2/11/2019
Checked	_____
Approved	_____



201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
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Legend

- Point of Release
- Springs Seeps
- Streams Canals
- Rivers
- NM Wetlands
- Lakes Playas
- FEMA Flood Zones 2011

Buffer Distance

- 100 Feet
- 200 Feet
- 300 Feet

N



0 112.5 225 450 Feet

Surface Water Protection Map
Sterling 20 State 1H - Marathon
Sec 17 T23S R27E, New Mexico

Figure 2

Date Saved:
2/11/2019

Revisions
By: _____ Date: _____ Descr: _____
By: _____ Date: _____ Descr: _____

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Drawn Heather Patterson
Date 2/11/2019
Checked _____
Approved _____



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Site and Sample location Map
Sterling 20 State 1H - Marathon
Sec 17 T23S R27E, NM

Figure 2

Revisions		
By: _____	Date: _____	Descr: _____
By: _____	Date: _____	Descr: _____
Copyright 2018-19 Souder, Miller & Associates - All Rights Reserved		

Drawn	<u>Heather Patterson</u>
Date	<u>2/12/2019</u>
Checked	_____
Approved	_____



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TABLES

Table 2:
NMOCD Closure Criteria Justification

Marathon
Sterling 20 State 1H (2RP-5091)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	75	NMOSE
Horizontal Distance From All Water Sources Within 1/2 Mile (ft)	0	Figure 1, USGS Map
Horizontal Distance to Nearest Significant Watercourse (ft)	1500	Figure 1, USGS Map

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		Closure Criteria (units in mg/kg)				
		Chloride *numerical limit or background, whichever is greater	TPH	GRO + DRO	BTEX	Benzene
< 50' BGS	X	600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'		20000	2500	1000	50	10
Surface Water	yes or no	if yes, then				
<300' from continuously flowing watercourse or other significant watercourse?	No	600	100		50	10
<200' from lakebed, sinkhole or playa lake?	No					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No					
<1000' from fresh water well or spring?	No					
Human and Other Areas						
<300' from an occupied permanent residence, school, hospital, institution or church?	No					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	No					
<100' from wetland?	No					
within area overlying a subsurface mine	No					
within an unstable area?	No					
within a 100-year floodplain?	yes					



Table 3:
Summary of Sample Results

Marathon Oil Perian LLC
Sterling 20 State 1H (2RP-5091)

Sample ID	Sample Date	Depth (feet bgs)	Proposed Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria				50	10	1000			2500	10000
L1	12/12/2018	0.5	excavate	196	2	2,700	18,000	8,200	28,900	<30
L2	12/12/2018	0.5	excavate	348	4	3,400	15,000	5,800	24,200	<30
L3	12/12/2018	0.5	excavate	150.8	3.1	2,400	18,000	6,600	27,000	<30
L4	12/12/2018	0.5	excavate	145.8	2.2	2,500	17,000	6,300	25,800	<30
L5	12/12/2018	0.5	excavate	155.7	1.6	2,200	14,000	4,300	20,500	<30
BH1	1/22/2019	4	in-situ	<0.23	<0.024	8.1	780	320	1108.1	--
	1/22/2019	6	in-situ	<0.23	<0.024	<4.8	540	240	780	--
	1/22/2019	8	in-situ	<0.23	<0.025	<4.9	62	<48	62	--
	1/22/2019	9	in-situ	<0.23	<0.025	<4.9	150	79	229	<30

"--" = Not Analyzed



APPENDIX A

FORM C141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: _____	Title: _____
Signature: <u>Colleen Kerrigan</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u> Received by: <u>Ana Beltrame</u> Date: _____	

Incident ID	nAB1833955064
District RP	2RP-5091
Facility ID	
Application ID	pAB1833954671

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>75</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input checked="" type="checkbox"/> Field data<input checked="" type="checkbox"/> Data table of soil contaminant concentration data<input checked="" type="checkbox"/> Depth to water determination<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input checked="" type="checkbox"/> Boring or excavation logs<input checked="" type="checkbox"/> Photographs including date and GIS information<input checked="" type="checkbox"/> Topographic/Aerial maps<input checked="" type="checkbox"/> Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Incident ID	nAB1833955064
District RP	2RP-5091
Facility ID	
Application ID	pAB1833954671

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Callie Karrigan Title: HES Professional

Signature: Callie Karrigan Date: 2/12/2019

email: cnkarrigan@marathonoil.com Telephone: 575-297-0956

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1833955064
District RP	2RP-5091
Facility ID	
Application ID	pAB1833954671

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Callie Karrigan _____ Title: _ HES Professional _____

Signature: _____ *Callie Karrigan* _____ Date: ____2/12/2019_____

email: _____ cnkarrigan@marathonoil.com _____ Telephone: ____575-297-0956_____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

APPENDIX B

NMOSE WELLS REPORT



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 01261		CUB	ED				21	23S	27E	575780	3572889*	1521	250		
C 01195		C	ED		2	19	23S	27E	572958	3573260*	1646	180	100	80	
C 01781		C	ED		2	4	19	23S	27E	573161	3572659*	1752			
C 01781 POD2		C	ED		2	4	19	23S	27E	573161	3572659*	1752	210		
C 01781 POD3		C	ED		2	4	19	23S	27E	573161	3572659*	1752	210		
C 01618		C	ED	4	4	4	07	23S	27E	573252	3575384*	2070	250		
C 02377		C	ED			2	29	23S	27E	574575	3571666*	2088	232	170	62
C 03005		C	ED	3	4	4	07	23S	27E	573052	3575384*	2199	140	100	40
C 04044 POD1		CUB	ED	3	2	3	09	23S	27E	575504	3575907	2363	290	150	140
C 02453		C	ED	4	4	2	29	23S	27E	574876	3571372*	2407	210	175	35
C 03301		C	ED	3	3	4	07	23S	27E	572597	3575268	2454	375		
C 01632		C	ED	3	2	4	07	23S	27E	573050	3575789*	2515	162	100	62
C 01632 CLW197648	O	C	ED	3	2	4	07	23S	27E	573050	3575789*	2515	162	100	62
C 01632 POD2		C	ED	3	2	4	07	23S	27E	573050	3575789*	2515	173	100	73
C 02112		C	ED	1	3	4	13	21S	24E	573831	3571337	2515	182	119	63
C 00195		CUB	ED	4	1	4	09	23S	27E	576069	3575827*	2582	128	83	45
C 01071		C	ED			1	08	23S	27E	573751	3576499*	2852	279	95	184
C 02191		C	ED			1	08	23S	27E	573751	3576499*	2852	252	75	177
C 00187		C	ED	1	1	4	15	23S	27E	577380	3574509	2949	210	125	85
C 00623		C	ED		2	1	15	23S	27E	577189	3575142*	3000	200		
C 03736 POD1		C	ED	2	2	4	13	23S	26E	571677	3574793	3035			
C 02300		CUB	ED			3	07	23S	27E	572160	3575676*	3050	402		
C 03892 POD1		C	ED	1	2	1	08	23S	27E	573846	3576764	3086	148	54	94
C 02510		C	ED	1	2	1	08	23S	27E	573848	3576806*	3126	350	350	0
C 00508 CLW225089	O	CUB	ED	4	1	3	10	23S	27E	576877	3575839*	3140	234	28	206
C 02326		C	ED			2	07	23S	27E	572948	3576491*	3160	140	99	41

*UTM location was derived from PLSS - see Help

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD															
Sub-															
Q Q Q															
POD Number	Code	basin	County	64	16	4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 00420	C	CUB	ED	4	2	09	23S	27E		576370	3576337*		3171	2151	

Average Depth to Water: 119 feet

Minimum Depth: 28 feet

Maximum Depth: 350 feet

Record Count: 27

UTMNAD83 Radius Search (in meters):

Easting (X): 574528.79

Northing (Y): 3573754.32

Radius: 3200

APPENDIX C

SAMPLING PROTOCOL & FIELD NOTES



Field Screening

P₃ 2082Location Name: *Stark #1 / Marathon*Date: *12/12/18*

Sample Name:	Collection Time:	EC (mS)	Temp (°C)	PID Reading /PF	Soil Color	Primary Soil Type	Moisture Level	Other Remarks/Notes:
<i>L1-6"</i>	<i>10:05</i>	<i>0.08</i>	<i>15.46</i>	<i>888</i>	Light Tan Gray Yellow	Dark Brown Olive Red <i>Gravel</i> <i>Sand</i> Clay	Dry Moist Wet	
<i>2</i>		<i>0.08</i>	<i>16.2</i>	<i>338</i>	Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	<i>Seve</i>
<i>L3</i>		<i>0.07</i>	<i>16.1</i>	<i>415</i>	Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	<i>1</i>
<i>L4-6"</i>	<i>10:48</i>	<i>0.01</i>	<i>15.4</i>	<i>1391</i>	Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	<i>11</i>
<i>L5</i>		<i>0.07</i>	<i>15.9</i>	<i>1446</i>	Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	<i>11</i>
					Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	
					Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	
					Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	
					Light Tan Gray Yellow	Dark Brown Olive Red Gravel Sand Clay	Dry Moist Wet	

APPENDIX D

LABORATORY ANALYTICAL REPORTS



*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com*

December 26, 2018

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Sterling

OrderNo.: 1812912

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/15/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1812912**

Date Reported: **12/26/2018**

CLIENT: Souder, Miller & Associates

Client Sample ID: L1-0.5

Project: Sterling

Collection Date: 12/12/2018 10:05:00 AM

Lab ID: 1812912-001

Matrix: SOIL

Received Date: 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/20/2018 12:33:20 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	18000	940		mg/Kg	100	12/18/2018 5:01:28 PM	42154
Motor Oil Range Organics (MRO)	8200	4700		mg/Kg	100	12/18/2018 5:01:28 PM	42154
Surr: DNOP	0	50.6-138	S	%Rec	100	12/18/2018 5:01:28 PM	42154
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2700	96		mg/Kg	20	12/18/2018 11:49:50 AM	42148
Surr: BFB	498	73.8-119	S	%Rec	20	12/18/2018 11:49:50 AM	42148
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	2.0	0.48		mg/Kg	20	12/18/2018 11:49:50 AM	42148
Toluene	43	0.96		mg/Kg	20	12/18/2018 11:49:50 AM	42148
Ethylbenzene	11	0.96		mg/Kg	20	12/18/2018 11:49:50 AM	42148
Xylenes, Total	140	1.9		mg/Kg	20	12/18/2018 11:49:50 AM	42148
Surr: 4-Bromofluorobenzene	123	80-120	S	%Rec	20	12/18/2018 11:49:50 AM	42148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1812912**Date Reported: **12/26/2018****CLIENT:** Souder, Miller & Associates**Client Sample ID:** L2-0.5**Project:** Sterling**Collection Date:** 12/12/2018 10:20:00 AM**Lab ID:** 1812912-002**Matrix:** SOIL**Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/20/2018 1:10:33 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	15000	940		mg/Kg	100	12/18/2018 5:25:50 PM	42154
Motor Oil Range Organics (MRO)	5800	4700		mg/Kg	100	12/18/2018 5:25:50 PM	42154
Surr: DNOP	0	50.6-138	S	%Rec	100	12/18/2018 5:25:50 PM	42154
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	3400	99		mg/Kg	20	12/18/2018 12:12:37 PM	42148
Surr: BFB	586	73.8-119	S	%Rec	20	12/18/2018 12:12:37 PM	42148
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	4.0	0.50		mg/Kg	20	12/18/2018 12:12:37 PM	42148
Toluene	54	0.99		mg/Kg	20	12/18/2018 12:12:37 PM	42148
Ethylbenzene	13	0.99		mg/Kg	20	12/18/2018 12:12:37 PM	42148
Xylenes, Total	150	2.0		mg/Kg	20	12/18/2018 12:12:37 PM	42148
Surr: 4-Bromofluorobenzene	127	80-120	S	%Rec	20	12/18/2018 12:12:37 PM	42148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1812912**Date Reported: **12/26/2018****CLIENT:** Souder, Miller & Associates**Client Sample ID:** L3-0.5**Project:** Sterling**Collection Date:** 12/12/2018 10:30:00 AM**Lab ID:** 1812912-003**Matrix:** SOIL**Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/20/2018 1:47:47 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	18000	990		mg/Kg	100	12/18/2018 5:50:05 PM	42154
Motor Oil Range Organics (MRO)	6600	4900		mg/Kg	100	12/18/2018 5:50:05 PM	42154
Surr: DNOP	0	50.6-138	S	%Rec	100	12/18/2018 5:50:05 PM	42154
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2400	93		mg/Kg	20	12/18/2018 12:35:25 PM	42148
Surr: BFB	463	73.8-119	S	%Rec	20	12/18/2018 12:35:25 PM	42148
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	3.1	0.46		mg/Kg	20	12/18/2018 12:35:25 PM	42148
Toluene	39	0.93		mg/Kg	20	12/18/2018 12:35:25 PM	42148
Ethylbenzene	8.7	0.93		mg/Kg	20	12/18/2018 12:35:25 PM	42148
Xylenes, Total	100	1.9		mg/Kg	20	12/18/2018 12:35:25 PM	42148
Surr: 4-Bromofluorobenzene	124	80-120	S	%Rec	20	12/18/2018 12:35:25 PM	42148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1812912**Date Reported: **12/26/2018****CLIENT:** Souder, Miller & Associates**Client Sample ID:** L4-0.5**Project:** Sterling**Collection Date:** 12/12/2018 10:48:00 AM**Lab ID:** 1812912-004**Matrix:** SOIL**Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/20/2018 2:00:11 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	17000	920		mg/Kg	100	12/20/2018 11:18:14 AM	42154
Motor Oil Range Organics (MRO)	6300	4600		mg/Kg	100	12/20/2018 11:18:14 AM	42154
Surr: DNOP	0	50.6-138	S	%Rec	100	12/20/2018 11:18:14 AM	42154
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2500	99		mg/Kg	20	12/18/2018 12:58:07 PM	42148
Surr: BFB	466	73.8-119	S	%Rec	20	12/18/2018 12:58:07 PM	42148
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	2.2	0.50		mg/Kg	20	12/18/2018 12:58:07 PM	42148
Toluene	35	0.99		mg/Kg	20	12/18/2018 12:58:07 PM	42148
Ethylbenzene	8.6	0.99		mg/Kg	20	12/18/2018 12:58:07 PM	42148
Xylenes, Total	100	2.0		mg/Kg	20	12/18/2018 12:58:07 PM	42148
Surr: 4-Bromofluorobenzene	128	80-120	S	%Rec	20	12/18/2018 12:58:07 PM	42148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1812912**Date Reported: **12/26/2018****CLIENT:** Souder, Miller & Associates**Client Sample ID:** L5-0.5**Project:** Sterling**Collection Date:** 12/12/2018 10:50:00 AM**Lab ID:** 1812912-005**Matrix:** SOIL**Received Date:** 12/15/2018 9:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/20/2018 2:12:36 PM	42231
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	14000	480		mg/Kg	50	12/19/2018 11:14:52 PM	42154
Motor Oil Range Organics (MRO)	4300	2400		mg/Kg	50	12/19/2018 11:14:52 PM	42154
Surr: DNOP	0	50.6-138	S	%Rec	50	12/19/2018 11:14:52 PM	42154
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2200	97		mg/Kg	20	12/18/2018 11:12:00 PM	42148
Surr: BFB	440	73.8-119	S	%Rec	20	12/18/2018 11:12:00 PM	42148
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	1.6	0.49		mg/Kg	20	12/18/2018 11:12:00 PM	42148
Toluene	35	0.97		mg/Kg	20	12/18/2018 11:12:00 PM	42148
Ethylbenzene	9.1	0.97		mg/Kg	20	12/18/2018 11:12:00 PM	42148
Xylenes, Total	110	1.9		mg/Kg	20	12/18/2018 11:12:00 PM	42148
Surr: 4-Bromofluorobenzene	124	80-120	S	%Rec	20	12/18/2018 11:12:00 PM	42148

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 9
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812912

26-Dec-18

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42231		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 42231		RunNo: 56495					
Prep Date:	12/20/2018		Analysis Date: 12/20/2018		SeqNo: 1890343		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-42231		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 42231		RunNo: 56495					
Prep Date:	12/20/2018		Analysis Date: 12/20/2018		SeqNo: 1890344		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812912

26-Dec-18

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	LCS-42154		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 42154		RunNo: 56409					
Prep Date:	12/17/2018		Analysis Date: 12/18/2018		SeqNo: 1886087		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.5	70	130			
Surr: DNOP	4.1		5.000		81.7	50.6	138			

Sample ID	MB-42154	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	42154		RunNo:	56409				
Prep Date:	12/17/2018	Analysis Date:	12/18/2018		SeqNo:	1886088		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.1	50.6	138			

Sample ID	LCS-42188		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 42188		RunNo: 56437					
Prep Date:	12/18/2018		Analysis Date: 12/19/2018		SeqNo: 1887450		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.0		5.000		80.3	50.6	138			

Sample ID	MB-42188		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 42188		RunNo: 56437					
Prep Date:	12/18/2018		Analysis Date: 12/19/2018		SeqNo: 1887451		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.6		10.00		85.5	50.6	138			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812912

26-Dec-18

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42148		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 42148		RunNo: 56430					
Prep Date:	12/17/2018		Analysis Date: 12/18/2018		SeqNo: 1886658		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		87.8	73.8	119			

Sample ID	LCS-42148		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 42148		RunNo: 56430					
Prep Date:	12/17/2018		Analysis Date: 12/18/2018		SeqNo: 1886659		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.2	80.1	123			
Surr: BFB	1000		1000		102	73.8	119			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812912

26-Dec-18

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42148		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 42148		RunNo: 56430					
Prep Date:	12/17/2018		Analysis Date: 12/18/2018		SeqNo: 1886689		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		98.1	80	120			

Sample ID	LCS-42148		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 42148		RunNo: 56430					
Prep Date:	12/17/2018		Analysis Date: 12/18/2018		SeqNo: 1886690		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.025	1.000	0	80.5	80	120			
Toluene	0.90	0.050	1.000	0	90.5	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1812912

RcptNo: 1

Received By: Erin Melendrez 12/15/2018 9:40:00 AM

Completed By: Erin Melendrez 12/15/2018 10:56:44 AM

Reviewed By: SV 12/17/18

LB: DAD 12/17/18

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: DAD 12/17/18

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			
2	2.7	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 29, 2019

Heather Patterson
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Sterling

OrderNo.: 1901885

Dear Heather Patterson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/23/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1901885

Date Reported: 1/29/2019

CLIENT: Souder, Miller & Associates

Client Sample ID: 4'

Project: Sterling

Collection Date: 1/22/2019 12:45:00 PM

Lab ID: 1901885-001

Matrix: SOIL

Received Date: 1/23/2019 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	780	9.4		mg/Kg	1	1/25/2019 4:40:53 PM	42786
Motor Oil Range Organics (MRO)	320	47		mg/Kg	1	1/25/2019 4:40:53 PM	42786
Surr: DNOP	109	50.6-138		%Rec	1	1/25/2019 4:40:53 PM	42786
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	8.1	4.7		mg/Kg	1	1/25/2019 3:32:24 AM	42770
Surr: BFB	166	73.8-119	S	%Rec	1	1/25/2019 3:32:24 AM	42770
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2019 3:32:24 AM	42770
Toluene	ND	0.047		mg/Kg	1	1/25/2019 3:32:24 AM	42770
Ethylbenzene	ND	0.047		mg/Kg	1	1/25/2019 3:32:24 AM	42770
Xylenes, Total	ND	0.094		mg/Kg	1	1/25/2019 3:32:24 AM	42770
Surr: 4-Bromofluorobenzene	92.1	80-120		%Rec	1	1/25/2019 3:32:24 AM	42770

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1901885

Date Reported: 1/29/2019

CLIENT: Souder, Miller & Associates

Client Sample ID: 6'

Project: Sterling

Collection Date: 1/22/2019 12:50:00 PM

Lab ID: 1901885-002

Matrix: SOIL

Received Date: 1/23/2019 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	540	9.4		mg/Kg	1	1/25/2019 5:05:04 PM	42786
Motor Oil Range Organics (MRO)	240	47		mg/Kg	1	1/25/2019 5:05:04 PM	42786
Surr: DNOP	106	50.6-138		%Rec	1	1/25/2019 5:05:04 PM	42786
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/25/2019 3:55:40 AM	42770
Surr: BFB	138	73.8-119	S	%Rec	1	1/25/2019 3:55:40 AM	42770
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	1/25/2019 3:55:40 AM	42770
Toluene	ND	0.048		mg/Kg	1	1/25/2019 3:55:40 AM	42770
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2019 3:55:40 AM	42770
Xylenes, Total	ND	0.097		mg/Kg	1	1/25/2019 3:55:40 AM	42770
Surr: 4-Bromofluorobenzene	95.1	80-120		%Rec	1	1/25/2019 3:55:40 AM	42770

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1901885

Date Reported: 1/29/2019

CLIENT: Souder, Miller & Associates

Client Sample ID: 8'

Project: Sterling

Collection Date: 1/22/2019 12:55:00 PM

Lab ID: 1901885-003

Matrix: SOIL

Received Date: 1/23/2019 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	62	9.6		mg/Kg	1	1/25/2019 5:29:14 PM	42786
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/25/2019 5:29:14 PM	42786
Surr: DNOP	86.9	50.6-138		%Rec	1	1/25/2019 5:29:14 PM	42786
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/25/2019 4:18:54 AM	42770
Surr: BFB	111	73.8-119		%Rec	1	1/25/2019 4:18:54 AM	42770
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	1/25/2019 4:18:54 AM	42770
Toluene	ND	0.049		mg/Kg	1	1/25/2019 4:18:54 AM	42770
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2019 4:18:54 AM	42770
Xylenes, Total	ND	0.099		mg/Kg	1	1/25/2019 4:18:54 AM	42770
Surr: 4-Bromofluorobenzene	93.4	80-120		%Rec	1	1/25/2019 4:18:54 AM	42770

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1901885

Date Reported: 1/29/2019

CLIENT: Souder, Miller & Associates

Client Sample ID: 9'

Project: Sterling

Collection Date: 1/22/2019 1:00:00 PM

Lab ID: 1901885-004

Matrix: SOIL

Received Date: 1/23/2019 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	1/28/2019 4:57:30 PM	42842
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: lrm
Diesel Range Organics (DRO)	150	9.7		mg/Kg	1	1/25/2019 5:53:17 PM	42786
Motor Oil Range Organics (MRO)	79	48		mg/Kg	1	1/25/2019 5:53:17 PM	42786
Surr: DNOP	86.1	50.6-138		%Rec	1	1/25/2019 5:53:17 PM	42786
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/25/2019 4:42:07 AM	42770
Surr: BFB	98.8	73.8-119		%Rec	1	1/25/2019 4:42:07 AM	42770
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	1/25/2019 4:42:07 AM	42770
Toluene	ND	0.049		mg/Kg	1	1/25/2019 4:42:07 AM	42770
Ethylbenzene	ND	0.049		mg/Kg	1	1/25/2019 4:42:07 AM	42770
Xylenes, Total	ND	0.098		mg/Kg	1	1/25/2019 4:42:07 AM	42770
Surr: 4-Bromofluorobenzene	92.7	80-120		%Rec	1	1/25/2019 4:42:07 AM	42770

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1901885

29-Jan-19

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42842		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	42842		RunNo:	57302				
Prep Date:	1/28/2019		Analysis Date:	1/28/2019		SeqNo:	1917392		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-42842		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 42842		RunNo: 57302					
Prep Date:	1/28/2019		Analysis Date: 1/28/2019		SeqNo: 1917393		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1901885

29-Jan-19

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	LCS-42786		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 42786		RunNo: 57250					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1915186		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.3	63.9	124			
Surr: DNOP	4.7		5.000		93.9	50.6	138			

Sample ID	MB-42786		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 42786		RunNo: 57250					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1915187		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	50.6	138			

Sample ID	1901885-004AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	9'		Batch ID: 42786		RunNo: 57250					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1916312		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	180	9.5	47.30	152.7	60.7	53.5	126			
Surr: DNOP	3.9		4.730		82.7	50.6	138			

Sample ID	1901885-004AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	9'		Batch ID:	42786		RunNo:	57250				
Prep Date:	1/24/2019		Analysis Date:	1/25/2019		SeqNo:	1916313		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	200	9.5	47.57	152.7	98.0	53.5	126	9.41	21.7		
Surr: DNOP	4.3		4.757		90.2	50.6	138	0	0		

Sample ID	LCS-42818		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 42818		RunNo: 57295					
Prep Date:	1/25/2019		Analysis Date: 1/28/2019		SeqNo: 1917277		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.3	50.6	138			

Sample ID	MB-42818		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 42818		RunNo: 57295					
Prep Date:	1/25/2019		Analysis Date: 1/28/2019		SeqNo: 1917278		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1901885

29-Jan-19

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42818		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics			
Client ID:	PBS		Batch ID:	42818		RunNo:	57295			
Prep Date:	1/25/2019		Analysis Date:	1/28/2019		SeqNo:	1917278		Units: %Rec	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		90.6	50.6	138			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1901885

29-Jan-19

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42770		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 42770		RunNo: 57224					
Prep Date:	1/23/2019		Analysis Date: 1/24/2019		SeqNo: 1914524		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		96.5	73.8	119			

Sample ID	LCS-42770		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 42770		RunNo: 57224					
Prep Date:	1/23/2019		Analysis Date: 1/24/2019		SeqNo: 1914525		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	113	80.1	123			
Surr: BFB	1100		1000		110	73.8	119			

Sample ID	MB-42805		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 42805		RunNo: 57264					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1915632		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.4	73.8	119			

Sample ID	LCS-42805		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 42805		RunNo: 57264					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1915633		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	73.8	119			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1901885

29-Jan-19

Client: Souder, Miller & Associates

Project: Sterling

Sample ID	MB-42770	SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBS	Batch ID:	42770		RunNo:	57224				
Prep Date:	1/23/2019	Analysis Date:	1/24/2019		SeqNo:	1914566	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	80	120			

Sample ID	LCS-42770		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 42770		RunNo: 57224					
Prep Date:	1/23/2019		Analysis Date: 1/24/2019		SeqNo: 1914567		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.8	80	120			
Toluene	0.97	0.050	1.000	0	96.8	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.3	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.1	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.9	80	120			

Sample ID	MB-42805		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 42805		RunNo: 57264					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1915665		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		95.8	80	120			

Sample ID	LCS-42805		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 42805		RunNo: 57264					
Prep Date:	1/24/2019		Analysis Date: 1/25/2019		SeqNo: 1915666		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1901885

RcptNo: 1

Received By: Desiree Dominguez

1/23/2019 8:50:00 AM

DD

Completed By: Thom Maybee

1/23/2019 11:48:36 AM

Reviewed By: ENH

1/23/19

LB: DAD 1/23/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Not Present			

